

**Version of Amended Claims  
with Markings to Show Changes Made  
Corresponding to 37 CFR §1.121(c)(ii)**

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1(Amended). A method of reducing [the absorbability of] absorption into a laminated material used for the manufacture of [flexible] containers having flexible walls and which in use has an intended inner surface and [an] a vapor impermeable non-polyolefin core barrier layer, said method comprising arranging for at least one further layer, formed from a [substantially] non-polar thermoplastic[s] polyolefin resin filled with a platelet filler comprising talc, to be positioned inwardly of the barrier layer.

2 (Amended). A method according to claim 1, wherein the platelet filler comprises a high purity talc, and wherein the further layer has a CIE whiteness index of at least 40.

6(Amended). A laminated material for the manufacture of a [flexible] container having flexible walls and which, in use, has a surface intended to be external of the container and a surface intended to be internal of the container, the laminated material comprising an intermediate non-polyolefin barrier layer of thermoplastic[s] material having, on its inner side, at least one further layer comprising a [substantially] non-polar thermoplastic[s] polyolefin resin filled with a platelet filler comprising talc.

7(Amended). A laminated material according to claim 6, wherein the platelet filler comprises high purity talc, and wherein the further layer has a CIE whiteness index of at least 40.

15(Amended). A [flexible] container having flexible walls formed from a laminated material having a core barrier layer of a non-polyolefin thermoplastic[s] material with at least one further layer arranged internally of the barrier layer, said one further layer comprising a [substantially] non-polar thermoplastic[s] polyolefin resin filled with platelets of talc having an aspect ratio of at least 5[,] and an average aspect ratio of from 16 to 30, and wherein the one further layer has a CIE whiteness of at least 40.

25(Amended). A laminated material according to claim 24, wherein said barrier layer has a thickness of [about 50 microns] from 5 microns to 15 microns.

## REMARKS

Claims 1, 2, 6, 7, 15 and 25 have been amended and claims 27-35 have been added. Thus, claims 1, 2, 5-7, 12, and 15-35 are pending. Independent claims 1, 6 and 15 have been amended to set forth with greater particularity the novel and patentable subject matter of the present invention and to comply with §112, second paragraph. No new matter was added. It is submitted that all the claims distinguish in a patentable manner over the prior art cited by the Examiner. Accordingly, a notice of allowance is respectfully requested.

### I. 35 USC §112, second paragraph, Claim Rejections

In the Office Action, the Examiner rejected claims 1, 2, 6, 12, 15-18, 20, 23, 24 and 26 under 35 USC §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

More specifically, the Examiner stated that the words “absorbability” and “impermeable” in independent claim 1, and the words “flexible” and “substantially” in independent claims 1, 6 and 15, are not clearly defined.

The following amendments have been made to claims 1, 6 and 15 to overcome the above stated rejections.

The word “substantially” has been deleted from independent claims 1, 6 and 15.

The term “flexible container” in claims 1, 6 and 15 has been replaced with “container having flexible walls”. No new matter was added. See the specification at page 6, line 33, to page 7, line 1, and see claim 15, as filed.

The term “impermeable” as used in claim 1 has been amended to “vapor impermeable”. Thus, the barrier layer is now clearly defined as being “vapor impermeable”.

No new matter was added. See the specification on page 2, lines 4-5, where it states that the barrier layer provides “barrier properties to vapour transmission”.

The phrase “A method of reducing the absorbability of a laminated material” as used in claim 1 has been amended to “A method of reducing absorption into a laminated material”. As will be discussed in greater detail herein with respect to the rejections based on the prior art, the present invention reduces the absorption of flavoring material of a product, such as toothpaste (see page 1, lines 24 and 25, of the present application), which is contained within the laminated material. Thus, the phrase “a method of reducing absorption into a laminated material” clearly defines the goal of the present invention. No new matter was added. See, for instance, the specification on page 7, lines 14-16, and page 14, lines 4-6.

Applicants respectfully request reconsideration of the above referenced claim rejections and submit that the claims are now in compliance with the requirements of 35 USC §112, second paragraph.

## II. 35 USC §102(b) Claim Rejections

In the Office Action, the Examiner rejected claims 1, 5-7, 12, 16, 17 and 20-26 under 35 USC §102(b) as being anticipated in view of U.S. Patent No. 4,528,235 issued to Sacks et al. The Examiner states that the Sacks patent discloses a multilayer sheet which comprises “three layers of high density polyethylene comprising 10-50% of a talc filler having a platelet shape” and that each of these three layers “constitutes a barrier layer which is non-polar”.

As discussed on page 1 of the present application, there are two mechanisms for loss of flavoring of products contained in containers, “permeation” and “absorption”. The present invention deals primarily with absorption.

The specification of the present invention discloses that non-polyolefin barrier materials, such as ethylene vinyl alcohol (EVOH), polyamides, polyacrylonitrile, aliphatic polyketones and aluminium foil, are used to prevent vapor transmission through the walls of the laminated material and are generally expensive. Thus, a number of attempts have been made at improving the gas barrier properties of polyolefin materials (see page 2, lines 4 to 7 and 19 to 22 of the present application).

Independent claim 1 of the present invention, as amended, provides a method of reducing absorption into a laminated material by constructing the laminated material with both: (i) a layer of a thermoplastic non-polar polyolefin resin filled with a platelet talc filler; and (ii) a layer of a non-polyolefin barrier material. Independent claim 6, as amended, provides a laminated material having this same structure. In addition, the claims require that the talc filled polyolefin layer be located inwardly (ie., closer to the product stored in the container) relative to the non-polyolefin barrier layer.

The present invention, as claimed in independent claims 1 and 6, enables the thickness of the relatively expensive non-polyolefin barrier layer to be reduced, while substantially maintaining the permeation rate through the thinned down barrier layer. The Applicants have also surprisingly found that the inward location of the layer comprising a thermoplastic non-polar polyolefin resin filled with a platelet talc filler relative to the non-polyolefin barrier layer (ie., inwardly with respect to the container) results in an improvement in absorption properties (ie., less material is absorbed).

Further, the Applicants of the present application have discovered that the absorption properties of a laminated material which includes a non-polyolefin barrier layer (e.g., ethylene vinyl alcohol (EVOH), polyamides, polyacrylonitrile, aliphatic polyketones and aluminum

foil) can be affected and improved by the inward placement of a the thermoplastic non-polar polyolefin resin filled with a platelet talc filler.

As demonstrated by the examples and comparative examples provided in the specification, such an arrangement results, surprisingly, in an improvement in absorption properties (that is less material is absorbed), while the permeation rate through the thinned down non-polyolefin barrier layer remains substantially unchanged. Thus, the present invention makes it possible to reduce the thickness of the non-polyolefin barrier layer to less than 25 microns (see page 7, lines 8 to 18).

As admitted by the Examiner, the Sacks patent only discloses the use of films containing platelet fillers which provide an increased resistance to vapor permeability. In contrast, the present invention claimed in independent claims 1 and 6 require both a non-polyolefin barrier material and a polyolefin resin having a platelet talc filler. The problem of absorption of flavoring is not addressed in the prior art cited by the Examiner, and the method and laminate defined in independent claims 1 and 6, respectively, each provide a novel selection of a particular construction of laminate which addresses the problem of absorption of flavoring from contained products into the walls of containers.

It is clear that the Sacks patent does not disclose, suggest or teach the use of a non-polyolefin barrier layer, much less a reduction of the thickness of the relatively expensive non-polyolefin barrier materials (e.g., ethylene vinyl alcohol (EVOH), polyamides, polyacrylonitrile, aliphatic polyketones and aluminum foil). In addition, the Sacks patent clearly does not appreciate the steps that should be taken to maintain adequate barrier properties (including both "permeation" and "absorption").

It is therefore submitted that the invention claimed in independent claims 1 and 6, and all claims directly or indirectly dependent from claims 1 and 6, is novel and not anticipated by the Sacks patent. Reconsideration and removal of the §102(b) rejection is respectfully requested.

## II. 35 USC §103(a) Claim Rejections Based on the Sacks Patent

In the Office Action, the Examiner rejected claims 15, 18 and 19 under 35 USC §103(a) as being obvious in view of U.S. Patent No. 4,528,235 issued to Sacks et al.

The Examiner admits that limitations concerning the thickness of layers, aspect ratio of talc filler, and values of CIE whiteness values which are disclosed and claimed in the present application are not disclosed in the Sacks patent. However, the Examiner states that they could be determined through routine experimentation.

For reasons stated above, the Applicants submit that independent claim 15 and dependent claims 18 and 19 are patentable over the Sacks patent. To this end, claims 15, 18 and 19 each requires the presence of both a core barrier layer of a non-polyolefin thermoplastic material and a further layer arranged inwardly of the barrier layer. The further layer is a non-polar thermoplastic polyolefin resin filled with platelets of talc. The use of the talc filled layer reduces absorption of flavoring into the laminated walls of the container and enables the thickness of the barrier layer to be reduced.

It is clear that the Sacks patent does not disclose, suggest or teach the use of a non-polyolefin barrier layer, much less a reduction of the thickness of the relatively expensive non-polyolefin barrier materials (e.g., ethylene vinyl alcohol (EVOH), polyamides, polyacrylonitrile, aliphatic polyketones and aluminum foil). In addition, the Sacks patent

clearly does not teach the concept of maintaining adequate barrier properties (including both "permeation" and "absorption") as required by the claims of the present invention.

It is therefore submitted that the invention claimed in independent claim 15 and dependent claims 18 and 19 is novel and non-obvious relative to the disclosure of the Sacks patent. Reconsideration and removal of the above referenced §103(a) rejection is respectfully requested.

### III. 35 USC §103(a) Claim Rejections Based on the Sacks/Newman Combination

In the Office Action, the Examiner rejected claim 15 under 35 USC §103(a) as being obvious in view of the combination of U.S. Patent No. 4,528,235 issued to Sacks et al. and published European Patent Application No. 275,102.

The Examiner admits that the Sacks patent fails to disclose a container fabricated from the disclosed multilayer sheet. However, the Examiner states that the Newman published application discloses a container made from a multilayer polyolefinic sheet for use in preparing foods for heating in a microwave oven. Thus, the Examiner states that it would be obvious to fabricate a container from the multilayer sheet disclosed in the Sacks patent.

Applicants agree that the Newman reference relates to a multilayer sheet material for use in making containers for food products to be cooked or reheated in microwave ovens. In contrast to Sacks, Newman is not concerned with films having an increased resistance to vapour permeability, but rather seeks to provide a thermally stable container which can withstand heat generated inside a microwave oven without a significant loss of dimensional stability. As a consequence, the Applicants respectfully submit that there would not be any motivation for the skilled person to combine Newman with Sacks since these references



address completely different problems. In any event, neither Sacks nor Newman teaches reducing the absorbability of a laminated material.

The applicant has discovered that the absorption properties of a laminated material which includes a non-polyolefin barrier layer (e.g., ethylene vinyl alcohol (EVOH), polyamides, polyacrylonitrile, aliphatic polyketones and aluminum foil) can be affected and improved by the placement of a further layer comprising a thermoplastic non-polar polyolefin resin filled with a platelet talc filler inwardly of the barrier layer.

As stated above, the present invention enables the thickness of the relatively expensive non-polyolefin barrier layer to be reduced, while substantially maintaining the permeation rate through the thinned down barrier layer. The applicant has also surprisingly found that the inward location of the layer comprising a thermoplastic non-polar polyolefin resin filled with a platelet talc filler relative to the non-polyolefin barrier layer results in an improvement in absorption properties (ie. less flavoring material of the contained product is absorbed).

It is therefore submitted that the invention as claimed in claim 15, as amended, is novel and non-obvious over the cited prior art.

#### IV. Conclusion

The claims have been amended to clearly define over the prior art cited by the Examiner. To this end, independent claims 1, 6 and 15 require a non-polyolefin barrier layer and a non-polar thermoplastic polyolefin resin filled with a platelet filler comprising talc. These amendments have been made by way of clarification to further distinguish the core barrier layer from the platelet layer. No new matter is added. See the specification on page 2, lines 1 to 7, 19 to 22, and page 5, lines 13 to 14. The talc filler is the preferred filler material and is exemplified in the specification.


In addition, claims 2, 7 and 15 have been amended to further recite that the platelet layer has a "CIE whiteness index of at least 40". The limitation of the CIE whiteness index of at least 40 is supported by the text of the present application on page 6, lines 12 to 21. The CIE whiteness index of at least 40 relates to the composition of the non-polar thermoplastic polyolefin resin filled with a platelet filler as a whole, rather than to just the talc filler component. Claim 25 has been amended to recite that the barrier layer has a thickness of from 5 microns to 15 microns. This is disclosed in the present application on page 7, lines 8 to 12.

New claims 27-35 have been added. No new matter was added. New claim 27 is supported by pending claim 24; new claims 28, 30, 31, 33 and 34 are supported in the specification on page 7, lines 8 to 30; and new claim 29 is supported in the specification on page 2, lines 1 to 7 and page 6, lines 3 to 5. New claims 32 and 35 are supported in the specification on page 6, lines 6 to 21 and also in prior art document WO 96/17885 (cited in Applicants' previously filed IDS), which is incorporated into the present application (see page 3, lines 18 to 33). A CIE whiteness index of at least 45 is disclosed in WO 96/17885 on page 5; line 21.

In view of the amendments and remarks, Applicants respectfully submit that the rejections have been overcome and that the present application is in condition for allowance. Thus, a favorable action on the merits is therefore requested.

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